

# PERIODICALS

## **THE AMERICAN JOURNAL OF HUMAN GENETICS**

*December, 1962, Vol. 14, No. 4*

**A Search for Autosomal Linkage in a Trisomic Population: Blood Group Frequencies in Mongols by** MARGERY W. SHAW *and* HENRY GERSHOWITZ.

When first meiotic nondisjunction of a given chromosome occurs, and there is no crossing-over between a particular locus and the centromere, both alleles from that parent are contributed to the zygote. The resulting trisomic population will show a different and predictable phenotype distribution from the parent or other control group. This theory is put to the test for a mongol population, to determine whether any one of eight blood group and secretor markers could be assigned to chromosome 21. The results suggest possible linkage of the ABO locus with this chromosome but at a distance from the centromere (allowing some crossing-over).

**Familial Mongolism (Trisomy-21 Syndrome) Resulting from a "15/21" Chromosome Translocation in More than Three Generations of a large Kindred by** M. N. MACINTYRE, W. I. STAPLES, A. G. STEINBERG, *and* J. M. HEMPEL.

Of twenty-one related individuals, eight were normal, ten were carriers of the 15/21 translocation and three were mongols. Ten out of twenty-one pregnancies in carrier females ended in abortion. Carrier fathers produced one normal and three carrier offspring.

**Dermal Patterns of 18 and D<sub>1</sub> Trisomics by** I. A. UCHIDA, K. PATEAU *and* D. W. SMITH.

Patients who are trisomic for chromosome 18 show simple arch patterns on nearly all digits and, like mongoloid children, often have shortened fifth fingers with only one crease. D<sub>1</sub> trisomics have distal axial triradii, again a feature of mongolism, and most show simian creases. The authors also describe a unique pattern in the hallucal area of one or both soles in such cases. It seems likely from their findings in trisomics that the dermal patterns depend upon a highly polygenic system.

**Diabetes Mellitus: a "Thrifty" Genotype Rendered Detrimental by "Progress"?** by JAMES V. NEEL.

The writer explores the theory that in the individual predisposed to diabetes there is an increased ability in early life to release insulin in response to a sugar load. This, in time, provokes an excess of "anti-insulin" which may upset the balance to the extent of producing clinical diabetes. He argues that such over-production of insulin may not always have been detrimental: at an earlier stage in man's evolution it

may have played a part in conserving energy when food intake was irregular.

**Final Pedigrees of Y Chromosome Inheritance by** R. R. GATES, M. R. CHAKRAVARTTI, *and* D. R. MUKHERJEE.

Inheritance of hairy ear rims, with or without hairs in the meatus, and profuse body hair is that of a Y-linked character in the six new Indian families described. Failure of penetrance may account for the rare exception in male-to-male transmission. None of the daughters of affected men pass on the trait to their sons.

**Follow-up Study of a Family Group Exhibiting Dominant Inheritance for a Syndrome Including Intestinal Polyps, Osteomas, Fibromas and Epidermal Cysts by** ELDON J. GARDNER.

The author can now describe very early manifestations of this syndrome, such as the lump on a baby's back noticed within a few days of birth, as well as those of later onset. Sometimes the disease process is astonishingly rapid; for instance, the youngest member of the family found to be positive for intestinal polyposis was in his early teens when a solitary minute polyp was discovered but by the age of eighteen numerous polyps had developed and total colectomy became necessary.

**Albinism Among the Hopi Indians in Arizona by** C. M. WOOLF *and* R. B. GRANT.

The authors find a relatively high frequency of about 1 in 227 for albinism in this inbred population, confirming previous reports.

**Abnormal Hemoglobins in a Brazilian Negro Population by** C. V. TONDO *and* F. M. SALZANO.

Heterozygotes for the sickle cell gene made up 5.9 per cent of the total 1,014 individuals studied. When the population was subdivided according to depth of skin colour and other Negroid features, the relative proportions of AS persons were 2.8, 5.9 and 8.9 per cent in the light mulattoes, dark mulattoes and Negroes respectively, showing the value of the *Hb<sup>s</sup>* gene as a Negro marker. AC individuals occurred about equally in Negroes and mulattoes and there were two examples of the AD haemoglobin type. There was nothing in the results to suggest selective disadvantage of the AS or AC heterozygotes. Haemoglobin S concentration in AS individuals showed indications of a trimodal frequency distribution.

**Secular Changes in Rates of Multiple Births in the United States by** O. JEANNERET *and* B. MACMAHON.

The present rate of white twin births in the United States is about 1 per cent of all confinements, according to this report. This is believed to represent a decline in frequency during the past thirty years, probably affecting dizygous sets only. The decline appears to be even more striking for triplets than for twins, and is almost confined to the Southern and Mountain regions. Incomplete registration (of single births) in earlier years may have been a contributory factor.

**A Method for Calculating the Inbreeding Coefficient**  
by AKIO KUDO.

For a highly inbred population of considerable size, this method has several advantages over those which involve tracing a pedigree chart. It is less liable to error, the author claims, and programming for computer use should be relatively simple.

HELEN BLYTH

**ANNALS OF HUMAN GENETICS**

*February, 1963, Vol. 26, Part 3.*

**Data for X-mapping Calculations, Israeli Families Tested for Xg, g-6-pd and for Colour Vision** by A. ADAM, C. SHEBA, RUTH SANGER, R. R. RACE, PATRICIA TIPPETT, JEAN HAMPER, JUNE GAVIN and D. J. FINNEY.

The bloods of eighteen Israeli families, known to involve glucose-6-phosphate dehydrogenase deficiency, were tested for the X-borne red cell antigen Xg<sup>a</sup>. A summary of the data reporting probable linkage has been reported previously (Adam *et al.*, 1962, *Lancet*, i, 1188-9).

The present paper gives a detailed record of the observations made, including tests for colour blindness. A preliminary analysis using Finney's development of Fisher's *u*-statistics shows the existence of linkage between the g-6-pd and Xg loci, significant at the 1 per cent level. Maximum-likelihood estimation, based on a scoring technique, provides an estimated recombination fraction of  $0.273 \pm 0.072$ . If the locus for colour-vision is represented by c.v., the order of the three loci is probably . . . Xg . . . g-6-pd . . . c.v. . . .

**Sex-linked Deaf-mutism** by B. W. RICHARDS.

This paper reports a family with six deaf-mute males in four different sibships, showing maternal transmission. Sex-limitation cannot be excluded, but it is thought that the condition is due to a sex-linked recessive.

**Inherited Brachydactyly and Hypoplasia of the Bones of the Extremities** by D. VIRGIL HAWS.

The author has studied a complex variable syndrome involving brachydactyly and various associated anomalies in a very large family through five generations. Full details of the investigation are presented.

It is suggested that the syndrome is due to a dominant gene with variable expression.

**Theoretical Evidence for an Autosomal Modifying Gene Pair in Glucose-6-phosphate-dehydrogenase-deficient families** by JAMES E. BOWMAN and SHEILA MAYNARD SMITH.

A number of pedigrees in the literature involving glucose-6-phosphate dehydrogenase deficiency are discussed. It is suggested that certain observed departures from the standard pattern for sex-linked inheritance may be due to the effects of an autosomal modifying gene pair.

**Studies of Crossing between Indians and Europeans** by S. C. TIWARI.

Data are presented on the results of crosses between Indians and Europeans. The characters: skin colour, palmar dermal ridge configurations, finger prints and ridge counts, are investigated and discussed.

**Haemoglobin types in Greek Populations** by N. A. BARNICOT, A. C. ALLISON, B. S. BLUMBERG, G. DELIYANNIS, C. KRIMBAS and A. BALLAS.

The incidence of abnormal haemoglobin genes has been studied in various populations living in the Greek mainland, Crete and Rhodes. In particular, it is found that the frequencies of the sickle-cell gene and the  $\beta$ -thalassaemia gene are negatively correlated. Further, high frequencies of abnormal haemoglobins occur only in regions that were formerly very malarious.

**Deficiency of Erythrocyte Glucose-6-phosphate-dehydrogenase in Greek Populations** by A. C. ALLISON, B. A. ASKONAS, N. A. BARNICOT, B. S. BLUMBERG and C. KRIMBAS.

The incidence of glucose-6-phosphate deficiency has been measured in subjects from various parts of Greece, and shows a positive correlation with the incidence of abnormal haemoglobin genes, as would be expected if all the genes are favoured by malarial selection.

**Nail-patella Syndrome Coupled with Blood Group B in a New Zealand Family** by C. M. GOODALL.

A New Zealand family providing further evidence of the linkage between the nail-patella and the ABO loci is reported.

**Parent-child Correlations for Body Measurements of Children between the Ages of One Month and Seven Years** by J. M. TANNER and W. J. ISRAELSOHN.

A longitudinal study has been made on a series of 117 children at intervals over the age-range one month to seven years, with regard to a number of body measurements such as height, weight, sitting-height, skinfolds, etc. Similar measurements were made on all the mothers, and about half the fathers.

## PERIODICALS

The general conclusion, drawn from various correlations, is that there are sex-controlled genes affecting physique that operate even before puberty.

**A Family Study of Hirschsprung's Disease** by BARTIN BODIAN and C. O. CARTER.

Family data are described for 207 index cases of Hirschsprung's disease, and the detailed findings are analysed and discussed. No simple theory can be suggested about the genetic factors predisposing to the disease.

**Translocation and Trisomic Mongol Sibs** by N. A. BARNICOT, J. R. ELLIS and L. S. PENROSE.

A family containing two mongol sisters is described. Cytological analysis showed that the elder had a chromosomal translocation, but the younger was of standard trisomic type.

**Spontaneous Translocation in a Cell Culture** by J. R. ELLIS.

The apparent occurrence of a spontaneous translocation in a cell culture derived from the mother of two mongol daughters is thought to shed light on the occurrence of abnormal chromosomes reported by other writers.

NORMAN T. J. BAILEY

### **EUGENICS QUARTERLY**

*December, 1962. Vol. 9, No. 4.*

**Population Differences in Vision Acuity** by RICHARD H. POST.

A specialized and admittedly speculative article dealing with the effects of relaxed selection as communities become developed from more primitive conditions. The author concludes that "All of them [the speculations] are consistent with the observation that a population's frequency of vision defects tends to be proportional to the elapsed time since it quit a 'primitive' culture-habitat." A very ample bibliography is appended.

**Sterilized Mental Defectives Look at Eugenic Sterilization** by G. SABAGH and R. B. EDGERTON.

Mental defectives sufficiently recovered to be discharged from institutional care and who were sterilized during their treatment were requested to express their feelings on the subject. It is quite possible that this paper is the first record of the views

of the actual individuals who have themselves received eugenic sterilization. Whether the sterilization is likely to facilitate or hinder the readjustment to normal communal life is a factor to be taken into consideration.

**Differential Inheritance of the Psychoneuroses** by IRVING I. GOTTESMAN.

Sixty-eight pairs of normal adolescent twins, half identical and half same-sex fraternal, are studied. It is concluded that little or no genetic component is associated with hypochondriacal and hysterical neuroses but "those with elements of anxiety, depression, obsession and schizoid withdrawal have a substantial genetic component under the environmental conditions obtaining for this particular adolescent sample".

**Medical Dilemma: Is Insulin Therapy Increasing the Frequency of the Gene for Diabetes Mellitus?** An argument by CHARLES M. WOOLF of the Department of Zoology of the Arizona State University that it may well be that insulin therapy is *not* increasing the frequency.

**Population Growth and the Alliance for Progress** by J. MAYONE STYCOS.

A paper read before The Society for Applied Anthropology, of Kansas City, which gives particular attention to aspects of migration, fertility and mortality and suggests that "we have one of the most compelling combinations of moral and pragmatic imperatives ever to face this country".

### **Book Reviews**

*Fertility and Survival, Population Problems from Malthus to Mao Tse-Tung* by Alfred Sauvy, translated from the French. Criterion Books, New York, 1961, and Chatto and Windus, London. Described as an important work for everyone directly or indirectly concerned with demographic problems, with emphasis on the complexity and warnings against simple solutions.

*Population Control: The Imminent World Crisis* edited by Melvin G. Shimm and Robinson O. Everett. Oceana Publications, New York, 1961. A collection of fourteen papers and articles.

*Human Heredity* by C. O. Carter. Penguin Books, Middlesex, 1962. A very favourable review of Dr. Carter's book.

C. W. USHER

# Contents

---

- Notes of the Quarter	<i>page</i> 65
UNITED NATIONS POPULATION ACTIVITIES—FREE- DOM FROM HUNGER—THE GALTON LECTURE— EUGENICS AND EDUCATION—CONTRACEPTION BY DISEASE—OBITUARY: CHARLES WICKSTEED ARM- STRONG—OUR CONTRIBUTORS	
- Family Planning: An Assessment	<i>Margaret Pyke</i> 71
- Education and the Humanist Revolution	<i>Sir Julian Huxley</i> 81
Natural Selection and Colour Blindness	<i>R. W. Pickford</i> 97
- Gonorrhoea and Fertility in Uganda	<i>Huw Griffith</i> 103
Notes and Memoranda	109
Expanding Frontiers of Genetics: A Review	<i>H. Lehmann</i> 111
Reviews of Books	113
Other Notices	120
Periodicals	123
- Rapid Falls in Fertility in Recent Years: Some Facts	127
Correspondence	129

THE EUGENICS SOCIETY is not responsible for statements made or  
opinions expressed by authors of articles, reviews and letters.

PUBLISHED Quarterly, Pergamon Press Ltd., Headington Hill Hall,  
Oxford.

PRICE: Ten Shillings per copy and Forty Shillings per annum, post free.  
Issued free to Fellows and Members of *The Eugenics Society*.

---

*Galtonia candicans, which is reproduced on the front page of the cover, is a  
flowering plant named in honour of Sir Francis Galton in 1880 by  
Professor J. Decaisne of the Paris Museum of Natural History*

# The Eugenics Society

<b>President</b>	*Professor Sir James Gray, C.B.E., M.C., SC.D., F.R.S.
<b>Honorary Past Presidents</b>	Sir Alexander Carr-Saunders, K.B.E., M.A., LL.D. Sir Julian Huxley, M.A., D.SC., F.R.S.
<b>Vice-Presidents</b>	Eliot Slater, M.D., F.R.C.P., D.P.M. A. C. Stevenson, B.SC., M.D., F.R.C.P. F. Yates, C.B.E., M.A., D.SC., F.R.S.
<b>Honorary Secretary</b>	*Professor A. S. Parkes, C.B.E., M.A., SC.D., F.R.S.
<b>Honorary Treasurer</b>	*Professor J. E. Meade, C.B., F.B.A., M.A.
<b>Honorary Librarian</b>	*†C. O. Carter, B.A., B.M., M.R.C.P.
<b>Members of the Council</b>	Colonel J. Campbell N. H. Carrier, M.A. †P. R. COX, F.I.A., F.S.S. †Professor P. Sargant Florence, C.B.E., M.A., PH.D. G. Ainsworth Harrison, M.A., B.SC., D.PHIL. *Mrs. V. Houghton *W. M. Keynes, M.A., M.D., M.CHIR., F.R.C.S. *†H. Lehmann, M.D., SC.D., M.R.C.P., F.R.I.C. †H. G. Maule, M.A., PH.D. A. E. Mourant, M.A., D.PHIL., D.M., M.R.C.P. John Peel, B.A. *J. A. Fraser Roberts, M.A., M.D., D.SC., F.R.C.P., F.R.S. J. R. Seale, M.A., M.D., M.R.C.P. Professor J. M. Thoday, PH.D. Sir Gerard Thornton, D.SC., F.R.S. Professor C. H. Waddington, M.A., SC.D., F.R.S. G. C. L. Bertram, M.A., PH.D. Mrs. K. Hodson Miss F. B. Schenk Miss S. M. Kordik
<b>General Secretary</b>	
<b>Editor</b>	
<b>Administrative Secretary</b>	
<b>Stenographer</b>	

\* *Members of the Executive and Finance Committee.*

† *Members of the Editorial and Library Committee: Mr. C. W. Usher also serves on this Committee.*

THE EUGENICS SOCIETY  
69 Eccleston Square, London SW1